December 4, 2009

DAIKIN SERVICE MANUAL NEWS

★Reliable technology ensures maximum customer satisfaction.★ **M-09011**

Case	Correction in Service manual SiIN34-817 VRV3
Model	RXYQ5-54PAY6

■Notice

There are some corrections in the service manual of SiIN34-817.
The corrections will be revised in the next issue.

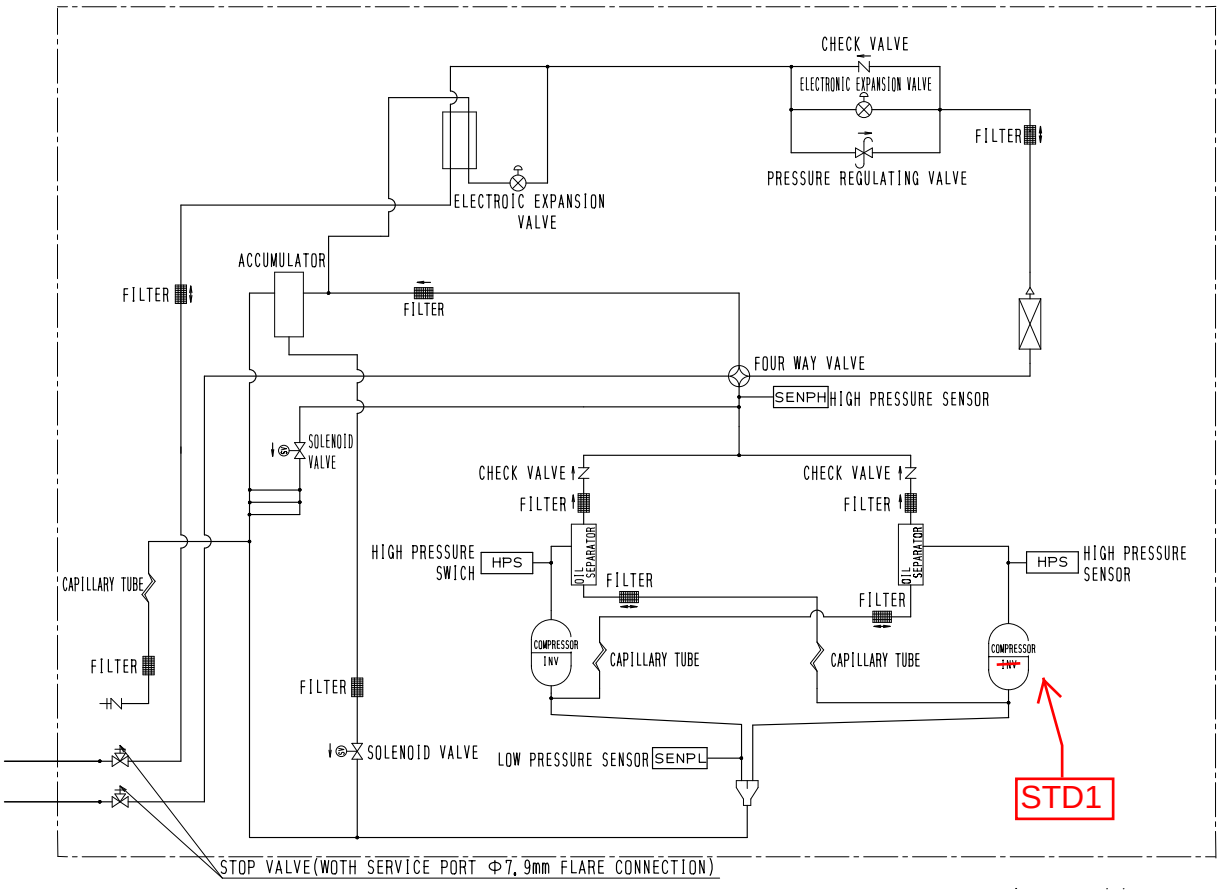
■ Applicable Book and Page

SiIN34-817 P340,67,336,308,127,90,63,61,63,65,70,71,174,203
P184,267

■ Detail

For correct information, refer to the following pages.

RXYQ10PA / 12PAY6

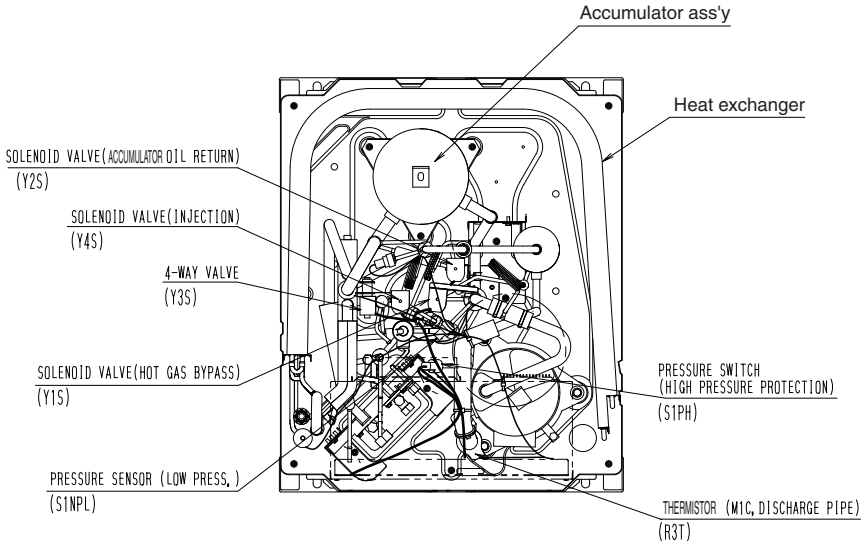


3D061122A

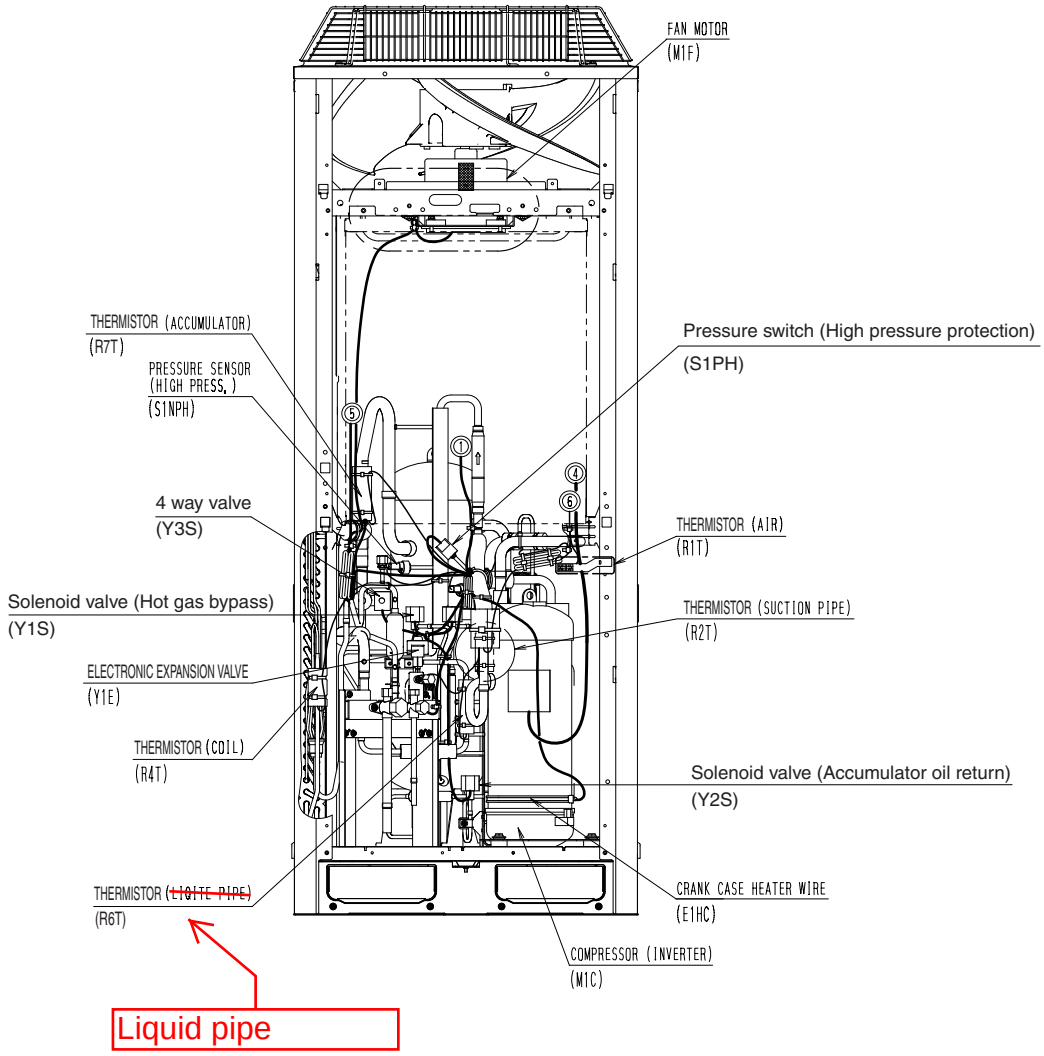
2. Functional Parts Layout

2.1 RXYQ5PA

Plan



Front View

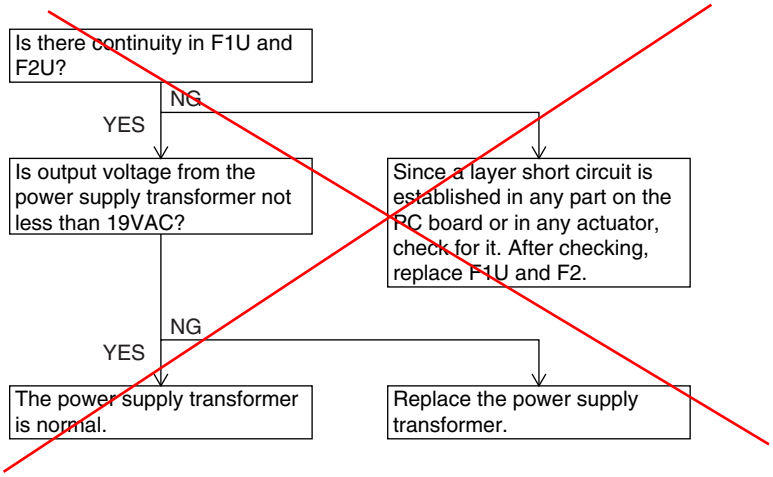


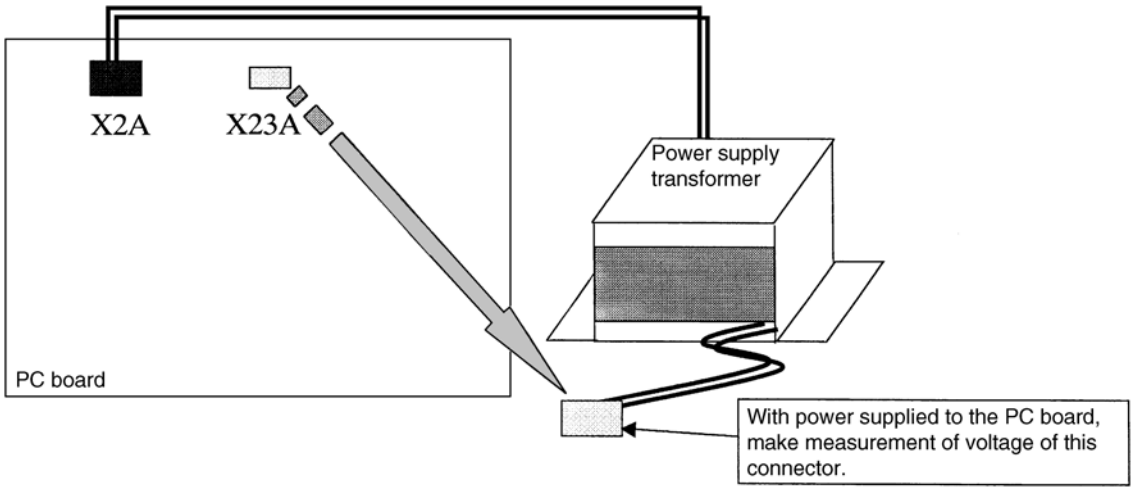
CHECK 5 **Troubleshooting for Power Supply Transformer**

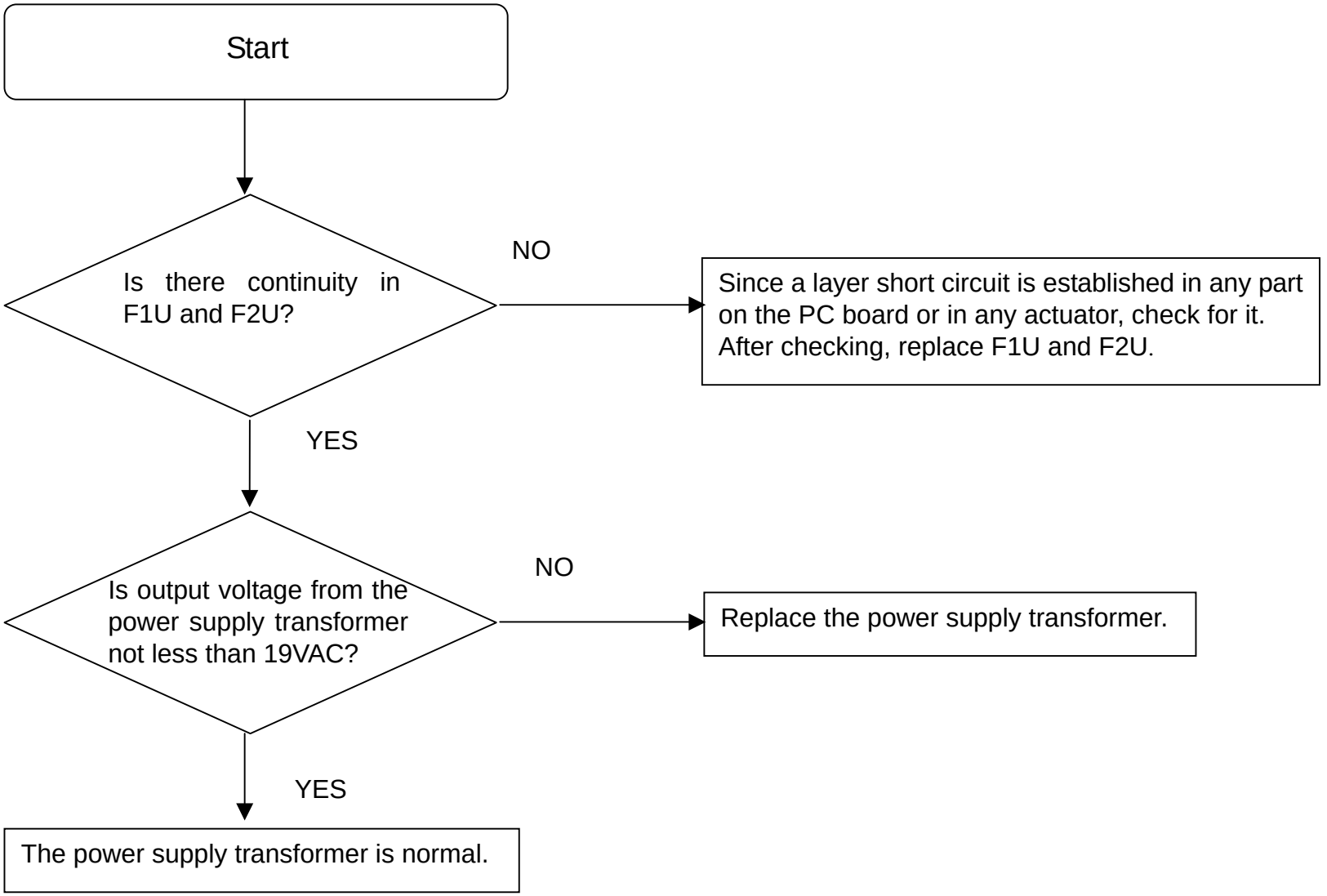
Check for continuity in F1U and F2U, and then check the power supply transformer for output.

* To check for continuity, be sure to turn OFF the power supply, and then dismount the fuse from the holder. Subsequently, put the test probes of a multiple meter against both ends of the fuse to check for continuity.

To check for output, disconnect the connector X23A from the PC board, and then make measurement of output voltage from the connector on the power supply transformer.
*To make this measurement, set the multiple meter to the AC range.


Is there continuity in F1U and F2U?
NG
YES
Is output voltage from the power supply transformer not less than 19VAC?
Since a layer short circuit is established in any part on the PC board or in any actuator, check for it. After checking, replace F1U and F2.
NG
YES
The power supply transformer is normal.
Replace the power supply transformer.


X2A
X23A
Power supply transformer
PC board
With power supplied to the PC board, make measurement of voltage of this connector.


Start
Is there continuity in F1U and F2U?
NO
Since a layer short circuit is established in any part on the PC board or in any actuator, check for it. After checking, replace F1U and F2U.
YES
Is output voltage from the power supply transformer not less than 19VAC?
NO
Replace the power supply transformer.
YES
The power supply transformer is normal.

3.52 "U8" Indoor Unit: Malfunction of Transmission Between Main and Sub Remote Controllers

Remote Controller Display

U8

Applicable Models

All models of indoor units

Method of Malfunction Detection

In case of controlling with 2-remote controller, check the system using microcomputer if signal transmission between indoor unit and remote controller (main and sub) is normal.

Malfunction Decision Conditions

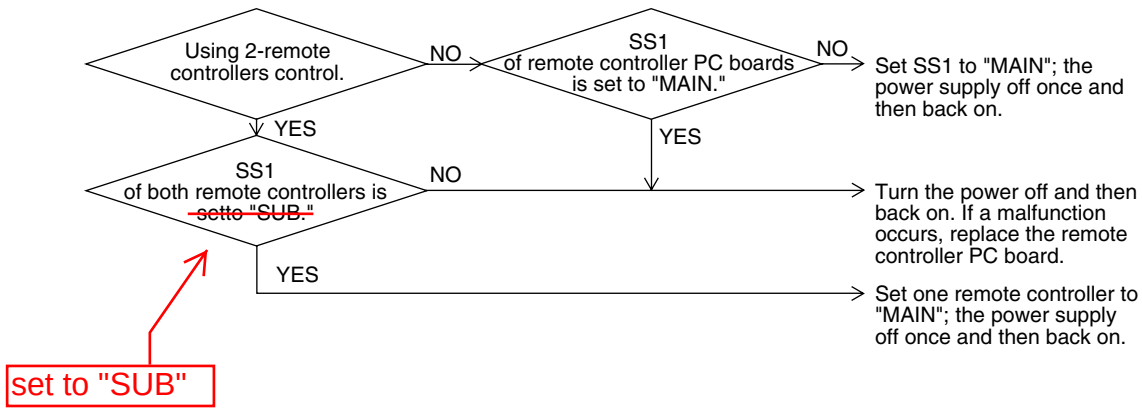
Normal transmission does not continue for specified period.

Supposed Causes

- Malfunction of transmission between main and sub remote controller
- Connection between sub remote controllers
- Defect of remote controller PC board

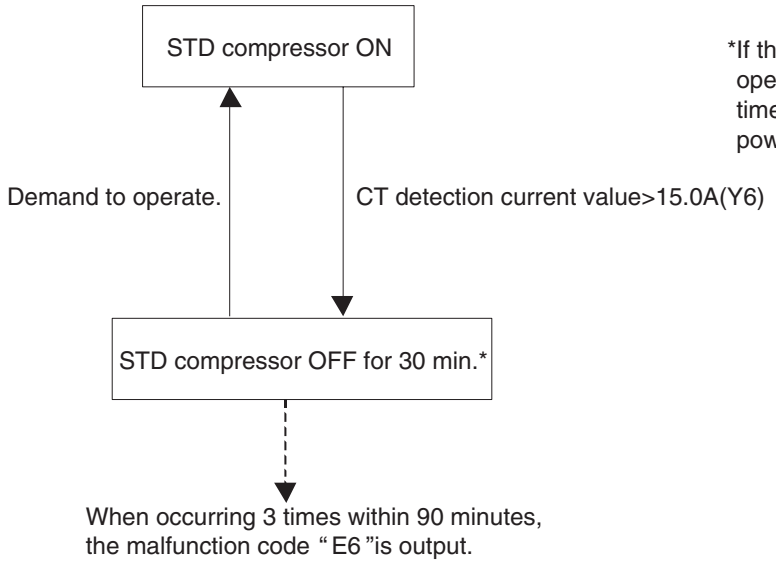
Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.


Using 2-remote controllers control.
NO
SS1 of remote controller PC boards is set to "MAIN."
NO
Set SS1 to "MAIN"; the power supply off once and then back on.
YES
YES
SS1 of both remote controllers is ~~setto "SUB."~~
NO
Turn the power off and then back on. If a malfunction occurs, replace the remote controller PC board.
YES
Set one remote controller to "MAIN"; the power supply off once and then back on.
set to "SUB"

4.5 STD Compressor Overload Protection

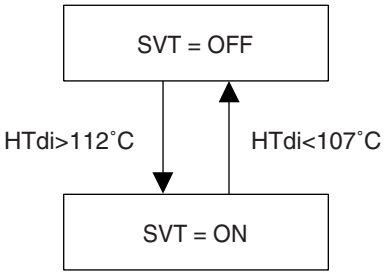
This control is used to prevent abnormal heating due to overcurrent to the compressor resulting from failures of STD compressor such as locking.


STD compressor ON
Demand to operate.
CT detection current value>15.0A(Y6)
STD compressor OFF for 30 min.*
When occurring 3 times within 90 minutes,
the malfunction code “E6”is output.

*If the power supply is reset while in operation prohibition mode, the prohibition timer will continue counting when the power supply is turned ON.

4.6 Injection Control (only for RXYQ5PA)

For transitional rise in discharge pipe temperature, have the liquid refrigerant flow into the suction side to reduce the discharge pipe temperature for the compressor protection.



~~HTdi: Correction value of the discharge pipe temperature on the INV compressor.~~

HTdi: Value of INV compressor discharge pipe temperature (Tdi) compensated with outdoor air temperature

1. Function General

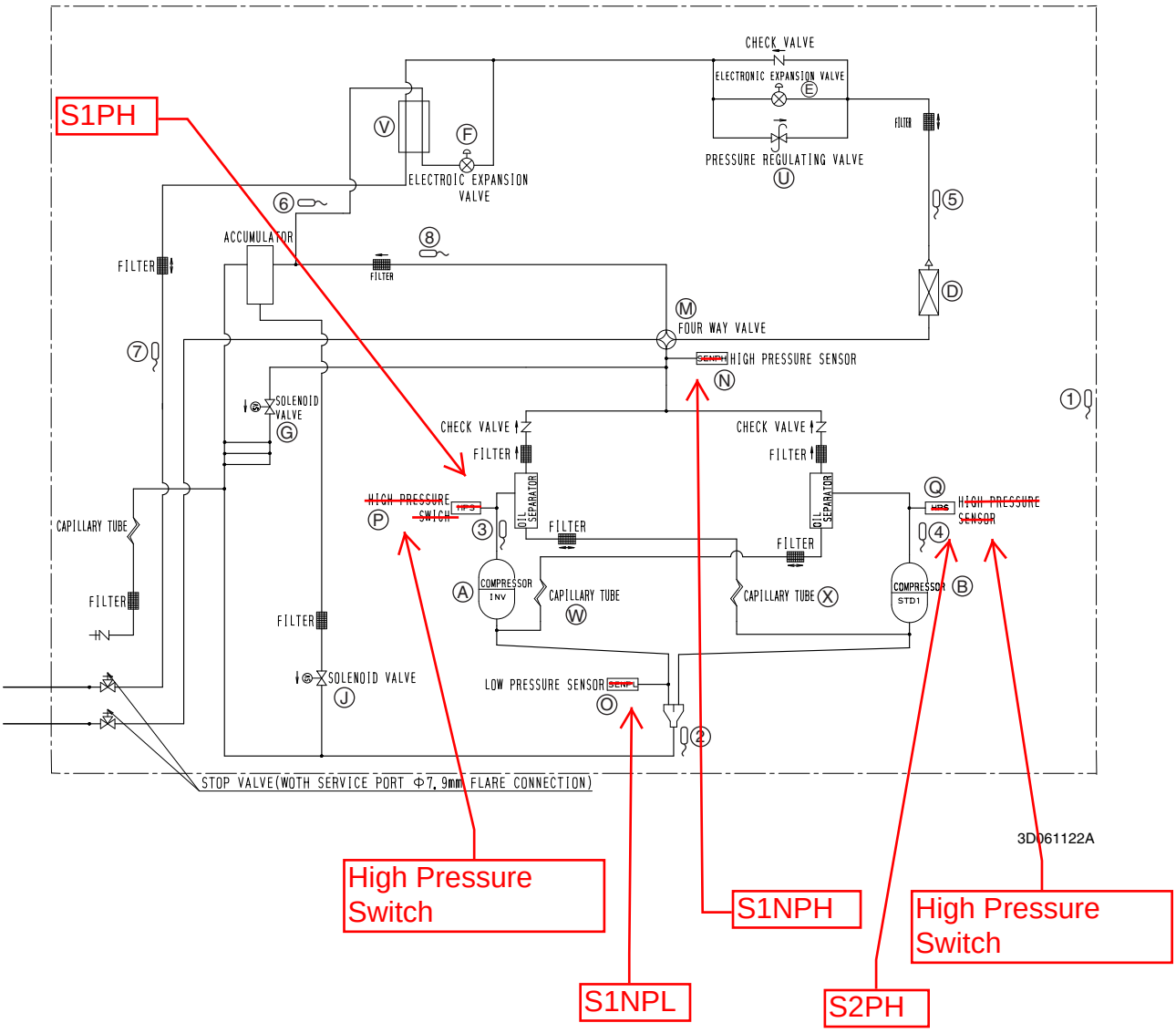
1.1 Symbol

Symbol	Electric symbol	Description or function
20S1	Y3S	Four way valve (Energize during heating)
DSH	–	Discharge pipe superheated degree
DSHi	–	Discharge pipe superheat of inverter compressor
DSHs	–	Discharge pipe superheat of standard compressor
EV	–	Opening of electronic expansion valve
EV1	Y1E	Electronic expansion valve for main heat exchanger
EV2	Y2E	Electronic expansion valve for sub-coolig heat exchanger
~~HTDi~~	–	Value of INV compressor discharge pipe temperature (R31T) compensated with outdoor air temperature
~~HTDs~~	–	Value of STD compressor discharge pipe temperature (R32T, R33T) compensated with outdoor air temperature
Pc	S1NPH	Value detected by high pressure sensor
Pe	S1NPL	Value detected by low pressure sensor
SH	–	Evaporator outlet superheat
SHS	–	Target evaporator outlet superheat
SVO	Y2S	Solenoid valve for oil return
SVP	Y1S	Solenoid valve for hot gas bypass
SVT	Y4S	Solenoid valve for injection
Ta	R1T (A1P)	Outdoor air temperature
Tb	R4T	Heat exchanger outlet temperature at cooling
Ts2	R2T	Suction pipe temperature detected with the suction pipe thermistor (R2T)
Tsh	R5T (–)	Temperature detected with the subcooling heat exchanger outlet thermistor (R5T)
Tc	–	High pressure equivalent saturation temperature
TcS	–	Target temperature of Tc
Te	–	Low pressure equivalent saturation temperature
TeS	–	Target temperature of Te
Tfin	R1T	Inverter fin temperature
Tl	R6T	Liquid pipe temperature detected with the liquid pipe thermistor (R6T)
Tp	–	Calculated value of compressor port temperature
Ts1	R7T	Suction pipe temperature detected with the accumulator inlet thermistor

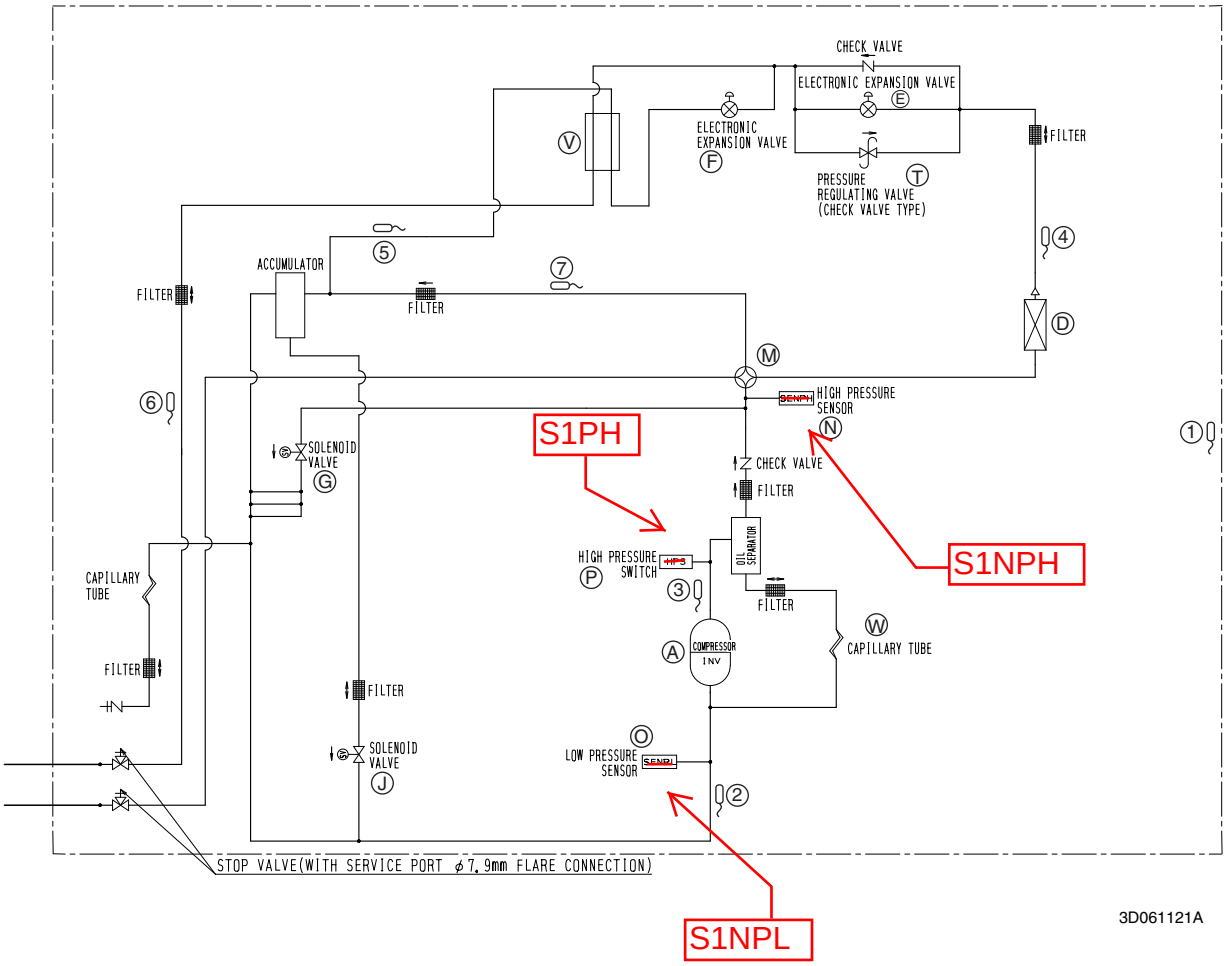
HTdi

HTds

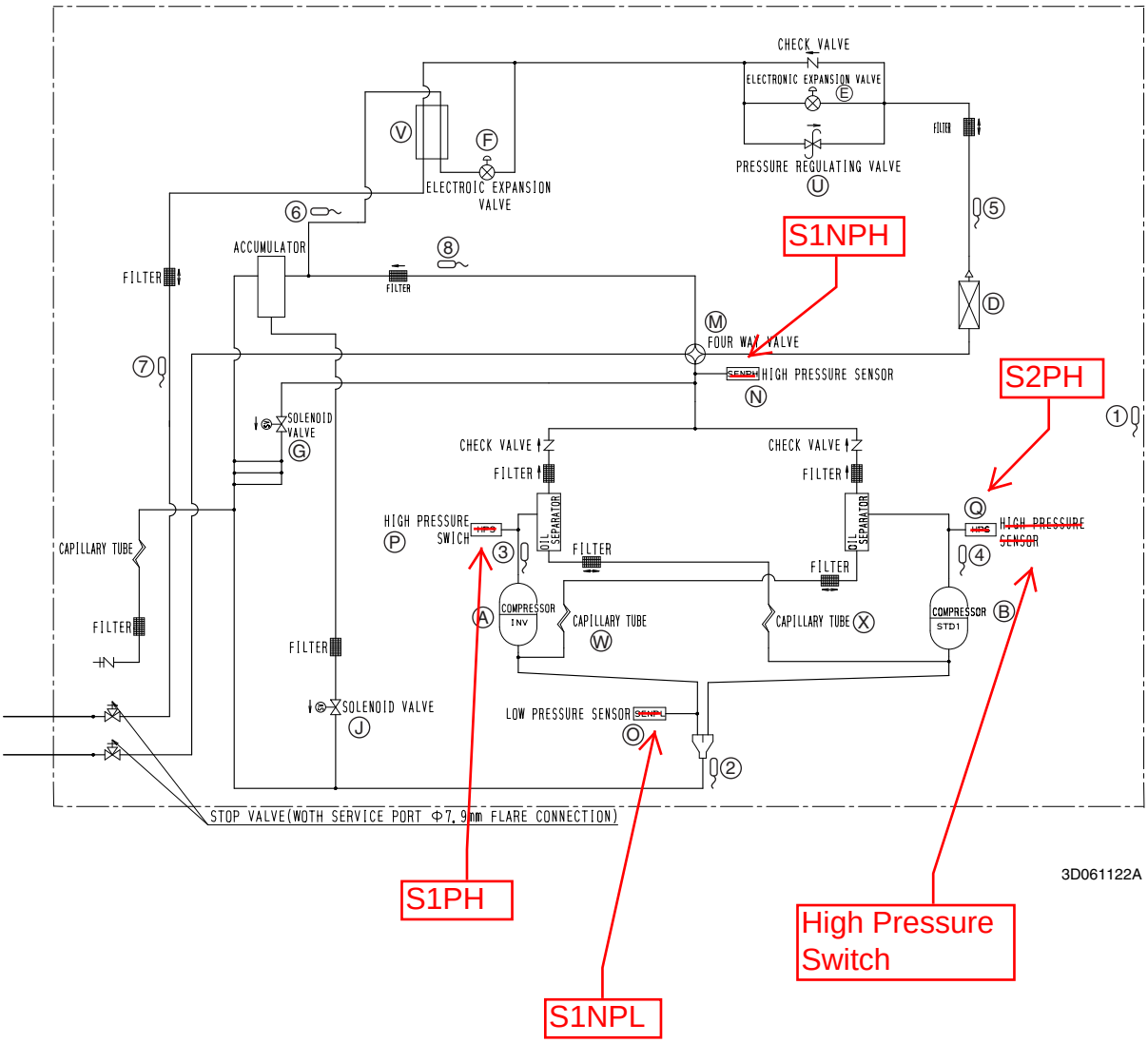
RXYQ10PA, 12PA



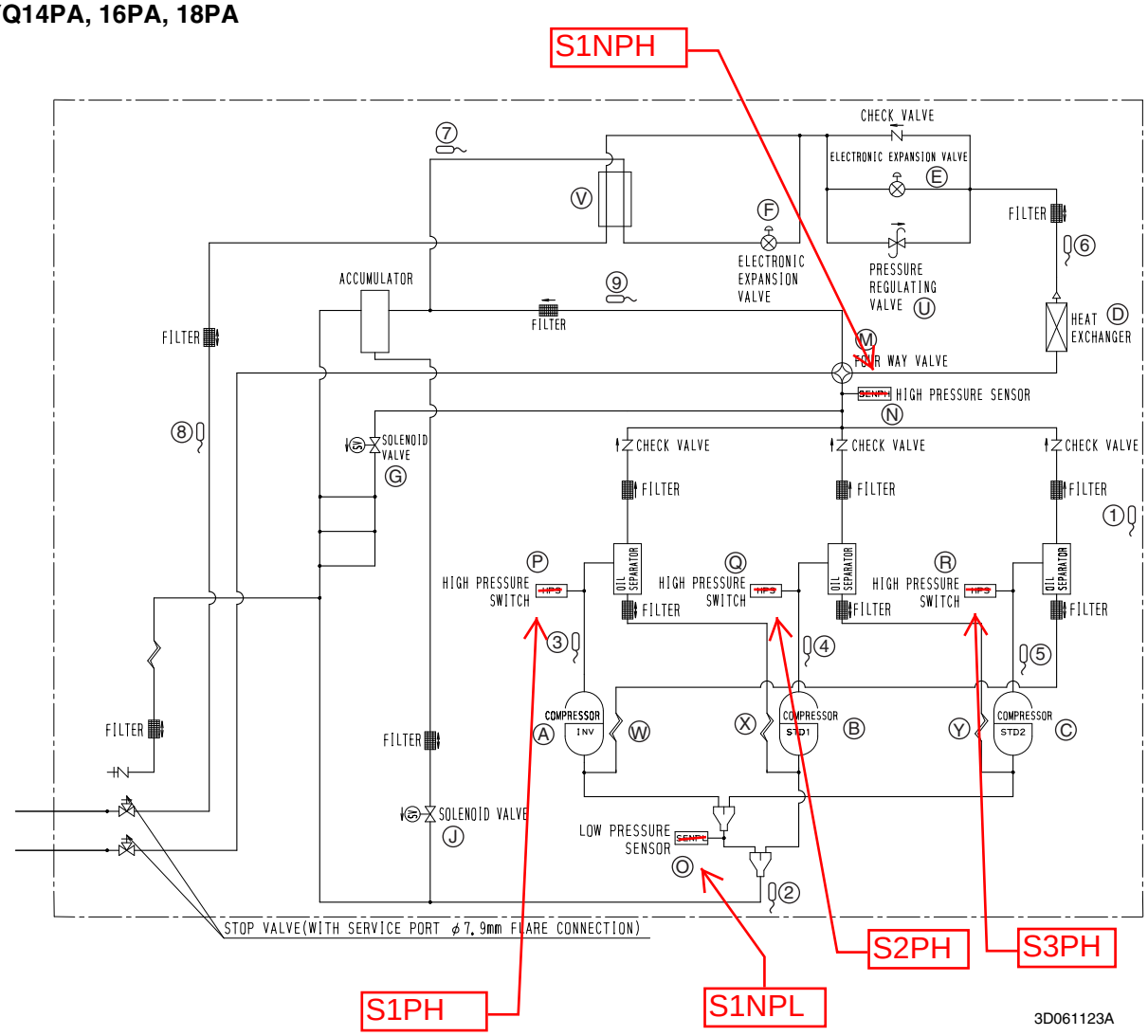
RXYQ8PA


CHECK VALVE
ELECTRONIC EXPANSION VALVE
E
ELECTRONIC EXPANSION VALVE
F
V
PRESSURE REGULATING VALVE (CHECK VALVE TYPE)
T
FILTER
4
5
7
ACCUMULATOR
FILTER
FILTER
D
M
6
HIGH PRESSURE SENSOR
N
1
S1PH
SOLENOID VALVE
G
CHECK VALVE
FILTER
S1NPH
HIGH PRESSURE SWITCH
P
3
OIL SEPARATOR
FILTER
CAPILLARY TUBE
W
CAPILLARY TUBE
A
COMPRESSOR INV
FILTER
FILTER
SOLENOID VALVE
J
O
LOW PRESSURE SENSOR
2
STOP VALVE(WITH SERVICE PORT φ7.9mm FLARE CONNECTION)
S1NPL
3D061121A

RXYQ10PA, 12PA

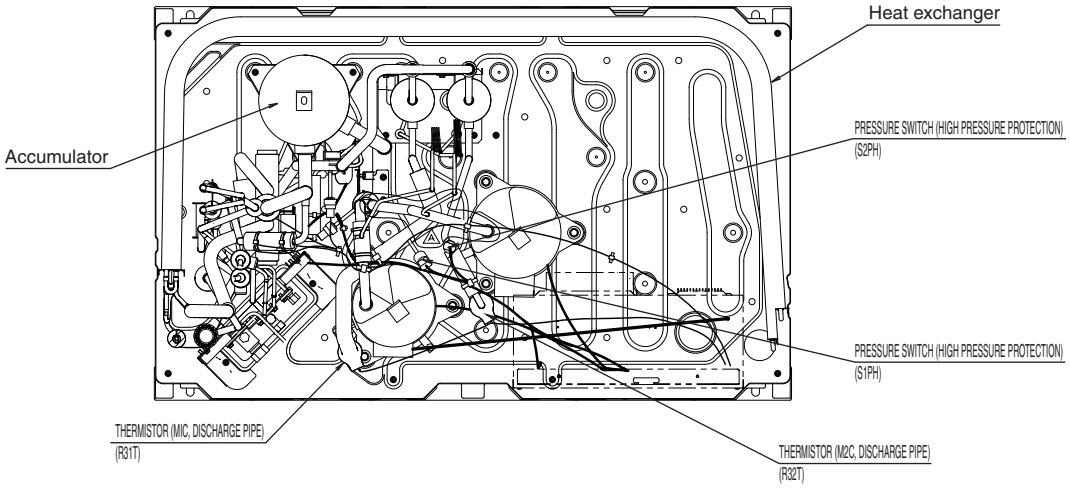


RXYQ14PA, 16PA, 18PA

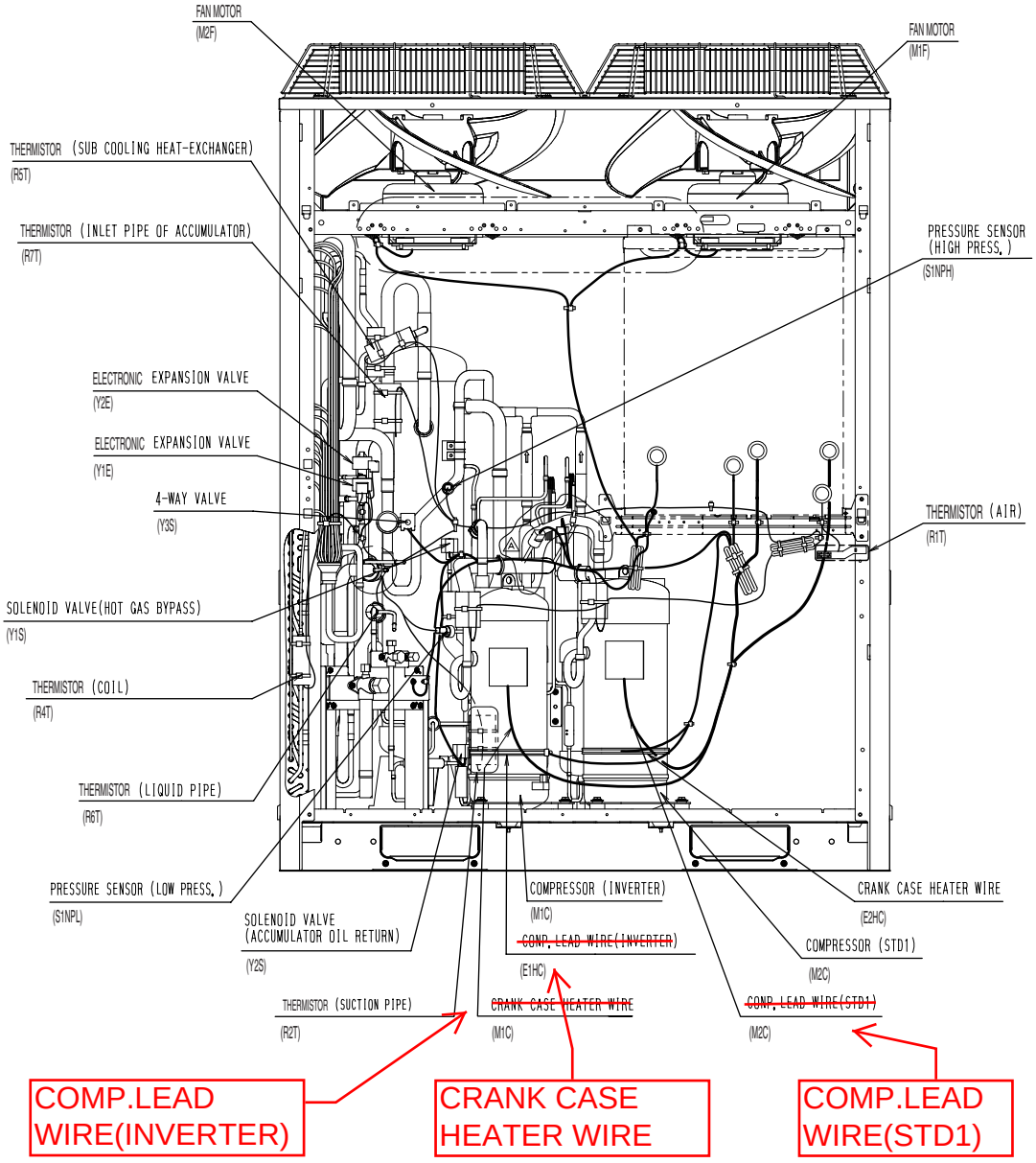


2.4 RXYQ12PA

Plan

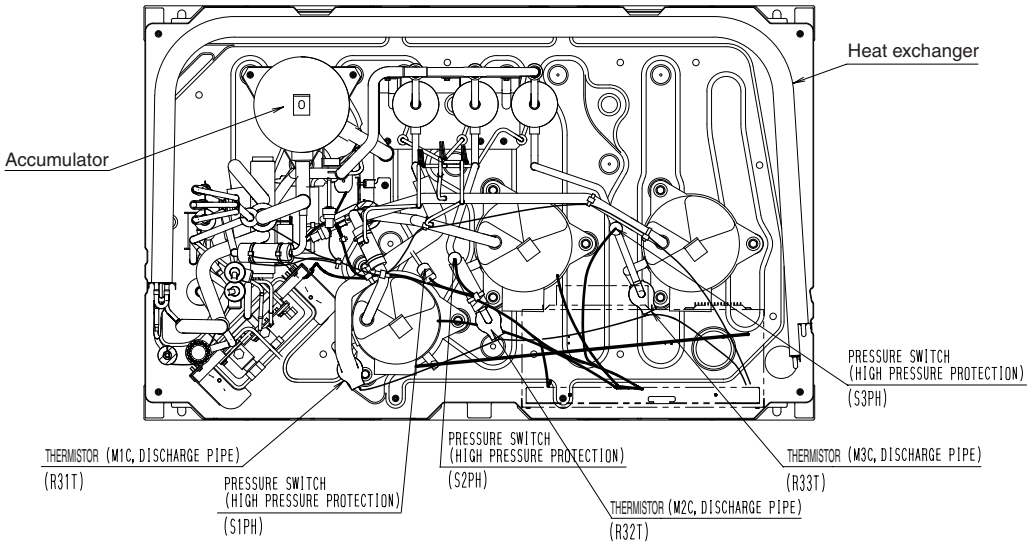


Front View

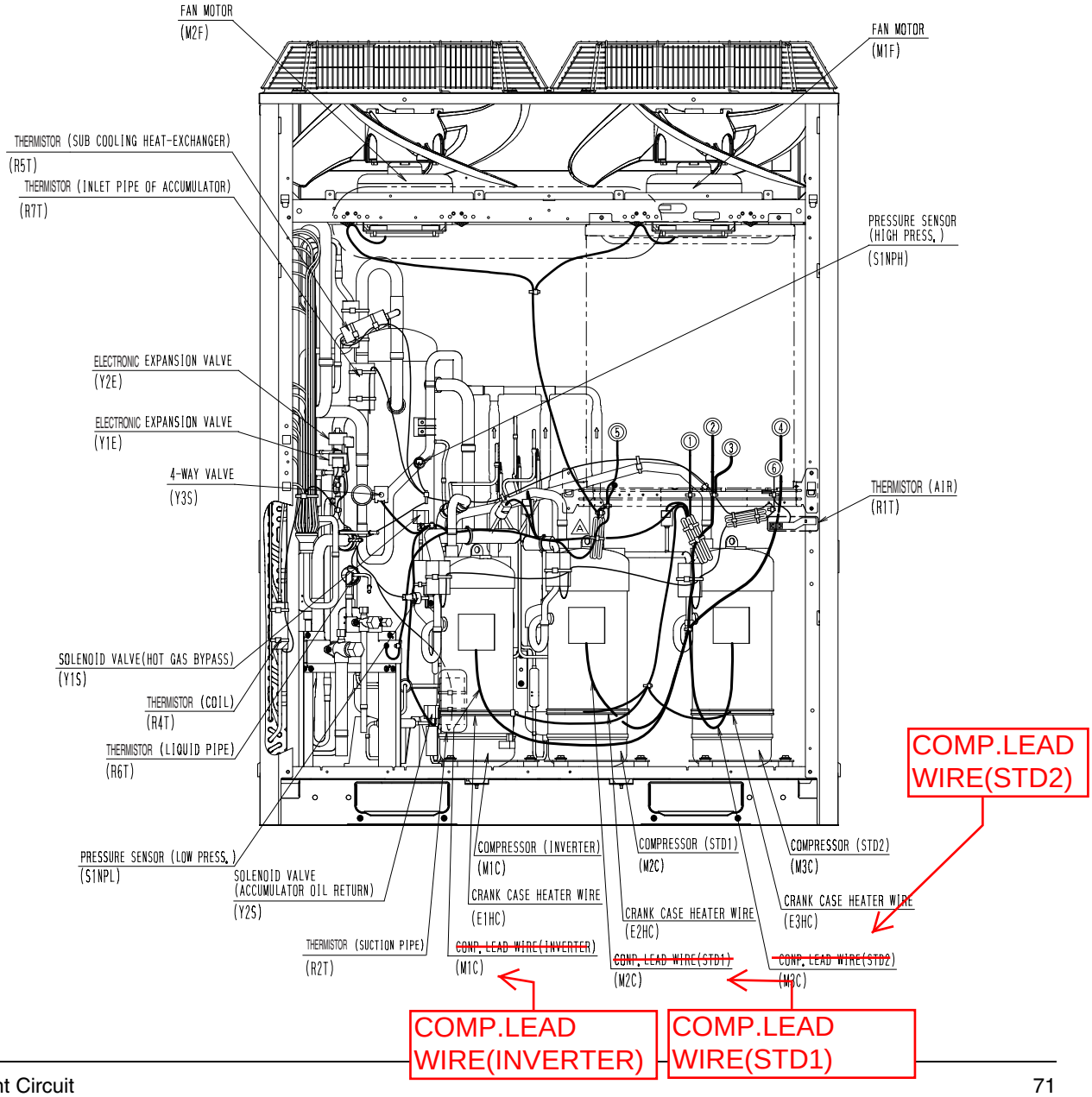


2.5 RXYQ14PA, 16PA, 18PA

Plan


Heat exchanger
Accumulator
PRESSURE SWITCH (HIGH PRESSURE PROTECTION) (S3PH)
THERMISTOR (M1C, DISCHARGE PIPE) (R31T)
PRESSURE SWITCH (HIGH PRESSURE PROTECTION) (S1PH)
PRESSURE SWITCH (HIGH PRESSURE PROTECTION) (S2PH)
THERMISTOR (M2C, DISCHARGE PIPE) (R32T)
THERMISTOR (M3C, DISCHARGE PIPE) (R33T)

Front View



Setting of Demand Operation

By connecting the external contact input to the demand input of the outdoor unit external control adaptor (optional), the power consumption of unit operation can be saved suppressing the compressor operating condition.

Set item	Condition	Content
Demand 1	Mode 1	The compressor operates at approx. 60% or less of rating.
	Mode 2	The compressor operates at approx. 70% or less of rating.
	Mode 3	The compressor operates at approx. 80% or less of rating.
Demand 2	—	The compressor operates at approx. 40% or less of rating.
Demand3	---------	Forced thermo OFF

A. When the demand operation is carried out by external instructions (with the use of the external control adaptor for outdoor unit).

1. While in "Setting mode 2", set the setting condition for set item No. 12 (Setting of external low noise/demand operation) to "YES".
2. If necessary, while in "Setting mode 2", select the set item No. 30 (Setting of Demand 1 level) and then set the setting condition to targeted mode.

B. When the normal demand operation is carried out. (Use of the external control adaptor for outdoor unit is not required.)

1. While in "Setting mode 2", make setting of the set item No. 32 (Setting of constant demand) to "ON".
2. While in "Setting mode 2", select the set item No. 30 (Setting of Demand 1 level) and then set the setting condition to targeted mode.

(8) Thermostat Switching

Differential value during thermostat ON/OFF control can be changed. (For details, refer to "6.4 Thermostat Control while in Normal Operation" on page 141.)

Mode No.	First Code No.	Second Code No.	Differential value
12(22)	2	01	1°C
		02	0.5°C

(9) Airflow Setting when Heating Thermostat is OFF

This setting is used to set airflow when heating thermostat is OFF.

* When thermostat OFF airflow volume up mode is used, careful consideration is required before deciding installation location. During heating operation, this setting takes precedence over "(7) Fan Stop When Thermostat is OFF."

Mode No.	First Code No.	Second Code No.	Contents
12 (22)	3	01	LL airflow
		02	Preset airflow

(10) Setting of Operation Mode to "AUTO"

This setting makes it possible to change differential values for mode selection while in automatic operation mode.

Mode No.	Setting switch No.	Setting position No.							
		01	02	03	04	05	06	07	08
12 (22)	4	0°C	1°C	2°C	3°C	4°C	5°C	6°C	7°C

The automatic operation mode setting is made by the use of the "Operation Mode Selector" button.

(11) Auto Restart after Power Failure Reset

For the air conditioners with no setting for the function ~~(same as factory setting)~~, the units will be left in the stop condition when the power supply is reset automatically after power failure reset or the main power supply is turned on again after once turned off. However, for the air conditioners with the setting, the units may start automatically after power failure reset or the main power supply turned on again (return to the same operation condition as that of before power failure).

(same as factory setting)

For the above reasons, when the unit is set enabling to utilize “Auto restart function after power failure reset”, utmost care should be paid for the occurrence of the following situation.

Caution

1. The air conditioner starts operation suddenly after power failure reset or the main power supply turned on again. Consequently, the user might be surprised (with question for the reason why).

2. In the service work, for example, turning off the main power switch during the unit is in operation, and turning on the switch again after the work is completed start the unit operation (the fan rotates).

(12) Airflow when Cooling Thermostat is OFF

This is used to set airflow to "LL airflow" when cooling thermostat is OFF.

Mode No.	First Code No.	Second Code No.	Contents
12 (22)	6	01	LL airflow
		02	Preset airflow

3.2 Field Setting from Outdoor Unit

3.2.1 Field Setting from Outdoor Unit

■ **List of Field Setting Items**

This following section indicates the list of field setting items. For the lists of dip switch contents, Setting mode 1, and Setting mode 2, refer to information in tables shown on the following page onward.

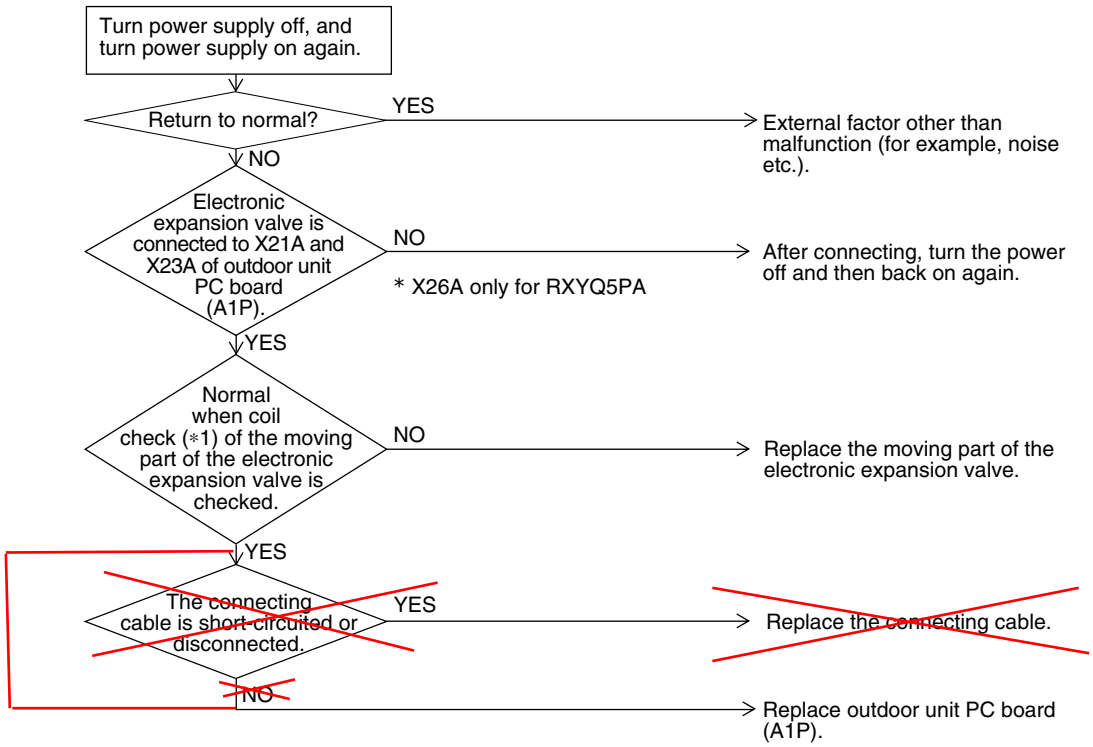
Setting item			Content and objective of setting	Overview of setting procedure
Function setting	1	Setting of COOL/ HEAT selection (*1)	■ COOL/HEAT selection methods are possible to select from the following (1) Control by each outdoor unit using the indoor unit remote controller (2) Control by each outdoor unit using the COOL/HEAT selection remote controller (3) Batch control by outdoor unit group using the indoor unit remote controller (4) Batch control by outdoor unit group using the COOL/HEAT selection remote controller	■ In order to use the COOL/HEAT selection remote controller, set the DS1-1 on the outdoor unit PC board to OUT. ■ For outdoor unit group control, set the system to "BATCH MASTER" or "SLAVE" while in "Setting mode 1". Then, make setting of COOL/HEAT batch address.
	2	Setting of low noise operation (*1)	A. Use external input to step down the upper limit of the fan (factory set to Step 8), providing low noise level. (1) Mode 1: Step 6 or lower (2) Mode 2: Step 5 or lower (3) Mode 3: Step 4 or lower	■ Use the "External control adaptor for outdoor unit". Set to "External control adaptor for outdoor unit" with No. 12 of "Setting mode 2" and select the mode with No. 25. If necessary, set the "Capacity priority setting" to ON with No. 29.
			B. The low noise operation aforementioned is enabled in nighttime automatic low noise operation mode. Start time: Possible to select in the range of 20:00 to 24:00 hours. End time: Possible to select in the range of 06:00 to 08:00 hours. (Use the said time as a guide since the start time and the end time are estimated according to outdoor temperatures.)	■ Make this setting while in "Setting mode 2". Select a mode with No. 22 of "Setting mode 2". Select the start time with No. 26 and the end time with No. 27. If necessary, set the "Capacity priority setting" to ON with No. 29.
	3	Setting of demand operation (*1)	■ Used to place limits on the compressor operating frequency to control the upper limit of power consumption. (1) Mode 1 of Demand 1: 60% or less of rating (2) Mode 2 of Demand 1: 70% or less of rating (3) Mode 3 of Demand 1: 80% or less of rating (4) Demand 2: 40% or less of rating	■ For setting with the use of "external control adaptor": Set the system to "External control adaptor for outdoor unit" with No. 12 of Setting mode 2" and select the mode with No. 30. ■ For setting only in "Setting mode 2": Set the system to Normal demand mode with No. 32 of "Setting mode 2" and select the mode with No. 30.
	4	Setting of AirNet address	■ Used to make address setting with AirNet connected.	■ Set the AirNet to an intended address using binary numbers with No. 13 of "Setting mode 2".
	5	Setting of hot water heater	■ Make this setting to conduct heating operation using the hot water heater.	■ Set No. 16 of "Setting mode 2" to ON.
	6	Setting of high static pressure	■ Make this setting to operate a system with diffuser duct while in high static pressure mode. (Use this setting mode when shields are installed on upper floors or balconies.) * In order to mount the diffuser duct, remove the cover from the outdoor unit fan.	■ Set No. 18 of "Setting mode 2" to ON.

• For setting items of (*1), refer to detailed information provided on page 196 onward.

(5) Demand3: Forced thermo OFF

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.


Turn power supply off, and turn power supply on again.
Return to normal?
YES
External factor other than malfunction (for example, noise etc.).
NO
Electronic expansion valve is connected to X21A and X23A of outdoor unit PC board (A1P).
NO
* X26A only for RXYQ5PA
After connecting, turn the power off and then back on again.
YES
Normal when coil check (*1) of the moving part of the electronic expansion valve is checked.
NO
Replace the moving part of the electronic expansion valve.
YES
The connecting cable is short-circuited or disconnected.
YES
Replace the connecting cable.
NO
Replace outdoor unit PC board (A1P).

*Make measurement of resistance between the connector pins, and then make sure the resistance falls in the range of 40 to 50Ω.

Measuring points
1 - 6
2 - 6
3 - 6
4 - 6